

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An energy attenuation apparatus in fluid communication with tubing that is adapted to convey ~~for a system conveying~~ a liquid under pressure, said apparatus comprising:

a unitary liquid-conveying means ~~in which said apparatus is disposed, that is in fluid communication with said tubing and has a diameter that is greater than a diameter of said tubing,~~ wherein said liquid-conveying means includes three chambers disposed in series, and wherein one of said chambers contains no ~~tubes~~ physical structure;

a first tube disposed in a second one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said first tube, wherein said first tube has a first end connected to and in fluid communication with an inlet or outlet end of said second one of said chambers, wherein said first tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said second one said chambers, and wherein said first tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said first tube and said second one of said chambers; and

a second tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said second tube, wherein said second tube has a

first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said second tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, and wherein said second tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said second tube and said third one of said chambers.

2. (Original) An energy attenuation apparatus according to claim 1, wherein said chambers are separated from, and communicate with, one another via respective restrictor means.

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Original) An energy attenuation apparatus according to claim 1, wherein said chamber that contains no tube can be any one of said three chambers.

7. (Original) An energy attenuation apparatus according to claim 1, wherein said free ends of first and second tubes are open to provide said aperture therein, and said peripheral surfaces of said first and second tubes have no apertures.

8. (Original) An energy attenuation apparatus according to claim 1, wherein at least one of said peripheral surfaces of said first and second tubes is provided with at least one aperture, and said free ends of said first and second tubes are open or closed.

9. (Original) An energy attenuation apparatus according to claim 1, wherein said free ends of said first and second tubes are spaced by an open gap ranging from 10 to 500mm from said outlet or inlet end of their respective chamber.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Currently Amended) An energy attenuation apparatus in fluid communication with tubing that is adapted to convey ~~for a system conveying~~ a liquid under pressure, said apparatus comprising:

a unitary liquid-conveying means ~~in which said apparatus is disposed, that is in fluid communication with said tubing and has a diameter that is greater than a diameter of said tubing,~~ wherein said liquid conveying means includes three chambers disposed in series, and wherein two of said chambers contain no ~~tube~~ physical structure; and

a tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube, wherein said tube has a first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, and wherein said tube has at least one aperture in said free end and/or on said peripheral surface

thereof for providing fluid communication between said tube and said third one of said chambers.

20. (Currently Amended) A method of attenuating energy in a system having tubing that is adapted to convey ~~conveying~~ a liquid under pressure, including the steps of:

disposing in said system a unitary liquid-conveying means that includes three chambers disposed in series and that is in fluid communication with said tubing and has a diameter that is greater than a diameter of said tubing, wherein at least one of said chambers contains no ~~tube~~ physical structure;

disposing in at least one of said chambers a tube such that an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube;

connecting a first end of said tube to and in fluid communication with an inlet or outlet end of its chamber;

spacing a second, free end of said tube by an open gap from said outlet or inlet end of said chamber; and

providing said tube with at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said tube and its chamber.

21. (New) An energy attenuation apparatus in fluid communication with tubing that is adapted to convey a liquid under pressure, said apparatus comprising:

three liquid-conveying means disposed in series, wherein each liquid-conveying means includes a chamber, wherein one of said chambers contains no

physical structure, and wherein said chambers are separated from, and communicate with, one another via respective tube sections;

a first tube disposed in a second one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said first tube, wherein said first tube has a first end connected to and in fluid communication with an inlet or outlet end of said second one of said chambers, wherein said first tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said second one of said chambers, and wherein said first tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said first tube and said second one of said chambers; and

a second tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said second tube, wherein said second tube has a first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said second tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, and wherein said second tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said second tube and said third one of said chambers.

22. (New) An energy attenuation apparatus in fluid communication with tubing that is adapted to convey a liquid under pressure, said apparatus comprising:

two liquid-conveying means, one of which is a unitary liquid-conveying means that includes two chambers, wherein the other liquid-conveying means includes one chamber, and wherein one of said chambers contains no physical structure;

a first tube disposed in a second one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said first tube, wherein said first tube has a first end connected to and in fluid communication with an inlet or outlet end of said second one of said chambers, wherein said first tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said second one of said chambers, and wherein said first tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said first tube and said second one of said chambers; and

a second tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said second tube, wherein said second tube has a first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said second tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, wherein said second tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said second tube and said third one of said chambers, and wherein said first and second ones of said chambers are separated from, and communicate with, one another via a restrictor means, and said second and third ones of said chambers are separated from, and communicate with, one another via a tubing means.

23. (New) An energy attenuation apparatus according to claim 21, wherein said chamber that contains no tube can be any one of said three chambers.
24. (New) An energy attenuation apparatus according to claim 22, wherein said chamber that contains no tube can be any one of said three chambers.
25. (New) An energy attenuation apparatus according to claim 21, wherein said free ends of first and second tubes are open to provide said aperture therein, and said peripheral surfaces of said first and second tubes have no apertures.
26. (New) An energy attenuation apparatus according to claim 22, wherein said free ends of first and second tubes are open to provide said aperture therein, and said peripheral surfaces of said first and second tubes have no apertures.
27. (New) An energy attenuation apparatus according to claim 21, wherein at least one of said peripheral surfaces of said first and second tubes is provided with at least one aperture, and said free ends of said first and second tubes are open or closed.
28. (New) An energy attenuation apparatus according to claim 22, wherein at least one of said peripheral surfaces of said first and second tubes is provided with at least one aperture, and said free ends of said first and second tubes are open or closed.
29. (New) An energy attenuation apparatus according to claim 21, wherein said free ends of said first and second tubes are spaced by an open gap ranging from 10 to 500mm from said outlet or inlet end of their respective chamber.

30. (New) An energy attenuation apparatus according to claim 22, wherein said free ends of said first and second tubes are spaced by an open gap ranging from 10 to 500mm from said outlet or inlet end of their respective chamber.

31. (New) An energy attenuation apparatus that is in fluid communication with tubing that is adapted to convey a liquid under pressure, said apparatus comprising:

three liquid-conveying means disposed in series, wherein each liquid conveying means includes a chamber, wherein two of said chambers contain no physical structure, and wherein said chambers are separated from, and communicate with, one another via respective tube sections; and

a tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube, wherein said tube has a first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, and wherein said tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said tube and said third one of said chambers.

32. (New) An energy attenuation apparatus in fluid communication with tubing that is adapted to convey a liquid under pressure, said apparatus comprising:

two liquid-conveying means, one of which is a unitary liquid-conveying means that includes two chambers, wherein the other liquid conveying means includes one chamber, and wherein two of said chambers contain no physical structure; and

a tube disposed in a third one of said chambers, wherein an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube, wherein said tube has a first end connected to and in fluid communication with an inlet or outlet end of said third one of said chambers, wherein said tube has a second, free end that is spaced by an open gap from said outlet or inlet end of said third one of said chambers, wherein said tube has at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said tube and said third one of said chambers, and wherein said first and second ones of said chambers are separated from, and communicate with, one another via a restrictor means, and said second and third ones of said chambers are separated from, and communicate with, one another via a tubing means.

33. (New) A method of attenuating energy in a system having tubing that is adapted to convey a liquid under pressure, including the steps of:

disposing in said system three liquid-conveying means that are disposed in series and that each include a chamber, wherein at least one of said chambers contains no physical structure, and wherein said chambers are separated from, and communicate with, one another via respective tube sections;

disposing in at least one of said chambers a tube such that an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube;

connecting a first end of said tube to and in fluid communication with an inlet or outlet end of its chamber;

spacing a second, free end of said tube by an open gap from said outlet or inlet end of said chamber; and

providing said tube with at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said tube and its chamber.

34. (New) A method of attenuating energy in a system having tubing that is adapted to convey a liquid under pressure, including the steps of:

disposing in said system two liquid-conveying means, one of which is a unitary liquid-conveying means that includes two chambers, wherein the other liquid-conveying means includes one chamber, and wherein at least one of said chambers contains no physical structure;

disposing in at least one of said chambers a tube such that an annular space is formed between an inner peripheral surface of said liquid-conveying means and an outer peripheral surface of said tube;

connecting a first end of said tube to and in fluid communication with an inlet or outlet end of its chamber;

spacing a second, free end of said tube by an open gap from said outlet or inlet end of said chamber; and

providing said tube with at least one aperture in said free end and/or on said peripheral surface thereof for providing fluid communication between said tube and its chamber, or wherein said first and second ones of said chambers are separated from, and communicate with, one another via a restrictor means, and said second and third ones of said chambers are separated from, and communicate with, one another via a tubing means.